
Summaries

UDC 551.72:561.2(571.51)

**Stanevich A.M., Gladkochub D.P., Kornilova T.A.,
Mazukbazov A.M., Karmanov N.S.
MICROPHOSSILIES OF UDZHINSKAYA SUITE
OF NORTH RIPHEA OF SIBERIAN CRATON**

Microfossils of udzhinskaya suite of Udzhinskoe high have been obtained and studied for the first time. Various organo-wall forms of acritarch and cyanobacteria are described. Among acritarch the morphological groups are singled out. They have been preliminary matched with large taxons of the vegetable world: brown and green algae. On the basis of age of gabbro-diabase breaking udzhinskaya suite in 1074 mln years, the conclusion that all studied organisms existed in medium rhipha was drawn.

UDC 550.838:551.243+553.41

**Korobeinikov A.F., Gusev A.I.
FACTORS OF MANTLE-CRUST INTERACTION
IN MAGMATOGENE FLUIDS OF ORE PARENT SYSTEMS**

The data on mantle-crust interaction in various types of mineralization detected in anomalous parameters of fluid mode of ore parent magmatites have been given. Mantle-crust interaction at formation of various types of deposits of Au, Ag, Cu, Mo, W, Fe, Ti, V, Ta, Nb occurs in anomalous increased concentrations of volatile components in late differentiates and dykes obliged to volatiles inflow in composition of mantle trans-magmatic fluids. In giant and supergiant deposits of less-common metals (Verkhnee Kairakty, Tyrnyauz) and gold (Muruntau) abyssal facies of magmatites are developed on deep levels. They were formed in conditions of increased pressures in ore parent areas in the range 6...9 MPa.

UDC 550.838:551.243+553.41+552.321.5

**Gusev A.I., Korobeinikov A.F.
MANTLE-CRUST INTERACTION IN GENERATION
OF VARIOUS TYPES OF MINERALIZATION:
GEOPHYSICAL AND PETROLOGICAL ASPECTS**

The data on mantle-crust interaction in various types of mineralization developed in anomalous structure and change of geophysical parameters on profiles GSZ MOVZ have been introduced. The position of deposits of gold-silver, gold-black shale, magmatogene iron-titanium-vanadium, gold-concentrated sulfur barite-polymetallic mineralization on deep profiles of GSZ MOVZ – «Bazalt» and on a profile MTZ MOGT «Batolit-1-SB» is given. The deposits are controlled by areas of mantle deep faults by which the interaction of mantle and crust sources occurred. Mantle-crust interaction at formation of deposits is developed in anomalous ratio of Sr, Nd, Pb, U isotopes in ore parent magmatites as well as by the ratio of sulfur isotopes in sulfide ores.

UDC 553.411.071:553.242.4

**Kucherenko I.V., Gavrilov R.Yu.,
Martynenko V.G., Verkhazin A.V.
THE NEW DATA ON PHEMOPHILE SPECIALIZATION OF
GOLD-BEARING BERESITES**

The new data confirming the regularity, earlier discovered in mesothermal gold ore deposits, – formation of contrast anomalies of

phemophile elements in association P, Ti, Mg, Fe, Mn, Ca in internal zones of propylite-beresite formation ore-bearing metasomatic haloes have been introduced. In this case, (deposit Chertovo Koryto of Patomskoje upland) concentration coefficient of the mentioned elements in apo-black-shale beresites achieve 6...9. It is shown that new facts, as the phenomenon in whole, enter into system of proofs of basaltogenic conception of mesothermal gold ore deposits in crystal substratum and black-shale series formation.

UDC 553.411.071: 550.4

**Gavrilov R.Yu., Kucherenko I.V., Martynenko V.G.,
Verkhazin A.V., Martynova T.E.
VOLUME GEOLOGICAL-GEOCHEMICAL MODEL
OF MESOTHERMAL GOLD ORE DEPOSIT CHERTOVO
KORYTO (PATOMSKOJE UPLAND)**

The series of publications devoted to the result of structural-dynamic, mineralogic-petrochemic and geochemic investigations of gold ore deposit Chertovo Koryto has been continued. The data on distribution of ore-genic elements (Au, Ag, As) in the volume of ore-bearing metasomatic halo formed in early-Proterozoic series of black shale – mikhailovskajy suite of Patomskoje upland are given. Change in ore-bearing substratum of gold assay, strength of gold correlations with associated metals is shown. The genetic aspects of deposit formation are discussed.

UDC 550.4:553.96/97

**Arbuzov S.I., Arkhipov V.S., Bernatonis V.K., Bobrov V.A.,
Maslov S.G., Mezhibor A.M., Preis Yu.I., Rikhvanov L.P.,
Sudyko A.F., Syso A.I.
AVERAGE CONTENT OF SEVERAL ELEMENTS-ADMIXTURES
IN PEATS OF SOUTH-EAST PART OF WEST-SIBERIAN PLATES**

Average content of 26 elements-admixtures in peats of south-east part of West-Siberian bed has been designed. This design is based on processing the data of neutron activation analysis of 1927 samples of 32 peat deposits and separate areas of Bolshoe Vasyuganskoe swamp. It is shown that peat of West-Siberian bed differs in high content of gold, bromine and chromium. The increasing influence of anthropogenic factor on content of elements-admixtures in peats of the region is noted.

UDC 681.515:621.6.033+681.518

**Polishchuk Yu.M., Yashchenko I.G.
GLOBAL GEOSPHERIC AND BIOSPHERIC PROCESSES
OF PHANEROZOE AND CYCLIC CHANGES
OF OIL CHEMICAL COMPOSITION**

Interrelations between cyclic changes of carbon-hydrogen mass in lithosphere, oil resources and global transgressions in Phanerozoic have been analyzed. It is shown that duration of cycles of these processes is approximately equal to galactic year (about 180 million years). Analysis of interrelation of cyclic variations in the contents of sulfur, resin and asphaltene in crude oils and cyclic changes of carbon-hydrogen mass in lithosphere showed that maximums of chemical composition indices and carbon-hydrogen mass occur in ordovician, carbonian and cretaceous periods. All above mentioned stratigraphical

intervals correspond to periods of «global geological summer» with growth of biological productivity. Comparison of time dependences of marine animals diversity and carbon-hydrogen mass revealed their similarity that is additional approve of relationship between biosphere evolution and oil and gas genesis.

UDC 553.98

Isaev V.I., Popov S.A., Khashitova A.B.
GENERATION SITES AND ACCUMULATION REGIONS OF
BAZHENOV OILS OF CENTRAL PART OF YGORSKIY ARCH

Paleotemperature simulation and paleotectonic reconstructions of Jurassic-Cretaceous sedimentary cut of Verkhelyaminskiy shaft occupied central part of Ygorskiy arch have been carried out. Paleosites of oil generation in Bazhenov formations are selected by geotemperature criterion. Paleoareas of oil-gathering and accumulation areas of Bazhenov oils are determined. The sites are differentiated by intensity and time action interval, accumulation regions – by the value of oil-gathering areas, locating predictive resources of Bazhenov oils.

UDC 550.831

Lobova G.A., Isaev V.I.
GEODENSITY MODEL AND REGIONS OF OIL AND GAS
ACCUMULATION OF ADDITIONAL COMPLEX OF
YUGORSKIY ARCH (WEST SIBERIA)

Oil-geological interpretation of geodensity model of Yugorskiy arch before-Jurassic deposits - new structure of the 1st order of central part of West-Siberian bed has been carried out. New regions of oil-and-gas accumulation in before-Jurassic cut on traverse: North-Kamynskaya col – Tumannyiy shaft – eastern part of Verkhelyaminskiy shaft – Elizarovskiy sag – eastern part of Rogozhnikovskiy shaft; in jurassic and cretaceous deposits at joint of Verkhelyaminskiy and Tumannyiy shafts; in neokomskiy complex in western part of Verkhelyaminskiy shaft were predicted.

UDC 550.42:577.4(571.1)

Savichev O.G., Kamneva O.A.
THE RIVER VAKH WATER FLOW (WESTERN SIBERIA),
THE CONDITIONS OF ITS FORMATION AND LONG-TERM
CHANGES

The results of statistic analysis of changes in average monthly and average annual temperature values of atmosphere and water balance elements of the river Vakh – large right inflow of the river Ob (Western Siberia) have been introduced. It is ascertained that the rate of annual total humidification and this river flow during 1937–2007 is statistically constant and amount to 694 and 302 mm, respectively. At the same time, the increase of the underground constituent of the total flow and winter low water flow is observed. The mechanism of these changes connected with the shift of hydrological season boundaries due to earlier periods of snow melting and late autumn increase is proposed. It is ascertained that favorable conditions for swamp formation activation are observed in the region.

UDC 539.3;539.4

Stephanov Yu.P., Evseev V.D.
NUMERICAL INVESTIGATION OF ROCK DEFORMATION
AND FAILURE UNDER THE ACTION OF STRICT STAMP

The formation of deformation localization areas in dense and porous rocks at strict stamp indentation has been considered. It is shown that in dense rocks the localized shift bands propagate deep into the sample. In this case, large fragments of material are formed. In porous materials a region of compact, finely broken rock is formed under the stamp and penetration depth of localized shift bands is considerably lower.

UDC 624.131;725.3:681.3.06

Strokova L.A.
USE OF DATA MINING ALGORITHMS FOR SOLVING PREDICTIVE
PROBLEMS AT CONSTRUCTION OF UNDERGROUND

The example of applying algorithms of decision trees and artificial neural networks for the problems of predicting settlement value by the data of full-size observations has been considered. The advantage of Kohonen self-organizing maps in comparison with regression analysis of monitoring data is shown. The conclusion about the efficiency of using the Data Mining algorithms for solving predictive problems of engineering geodynamics was drawn.

UDC 624.131.37:51-3

Strokova L.A.
ADJUSTMENT OF ELASTICITY PARAMETERS OF ELASTO-PLASTIC MODEL BY LABORATORY TEST SIMULATION

The results of calibrating coefficient of elasticity for the design model of engineering structure basis by simulation data of compressive ground tests have been introduced. Simulation was carried out by elastoplastic model with isotropic hardening Hardening Soil (HS, PLAXIS). Parameter calibration implied the coincidence of the designed curves with the curve obtained at laboratory test. The elasticity parameters for further numerical collapse simulation were ascertained.

UDC 622(571.5)(09)

Lukianov V.G.
PATRIARCH OF SIBERIAN MINING EDUCATION

Life of mining engineer D.A. Strelnikov, professor of Tomsk polytechnic institute, has been described.

UDC 378.4:622(571)(09)

Romanova T.A., Baksht F.B.
THE FIRST GRADUATION OF MINING ENGINEERS OF SIBERIA

In 1908 in Tomsk technological institute there was the first graduation in Siberia of mining engineers of mining and geological professions. 20 people of 106 students of the first intake got the diplomas. The information on class membership, religion, place of birth, education and life style of students of those years are given. Short personal data of some students of the first intake are introduced. The unpublished before archival materials are used.